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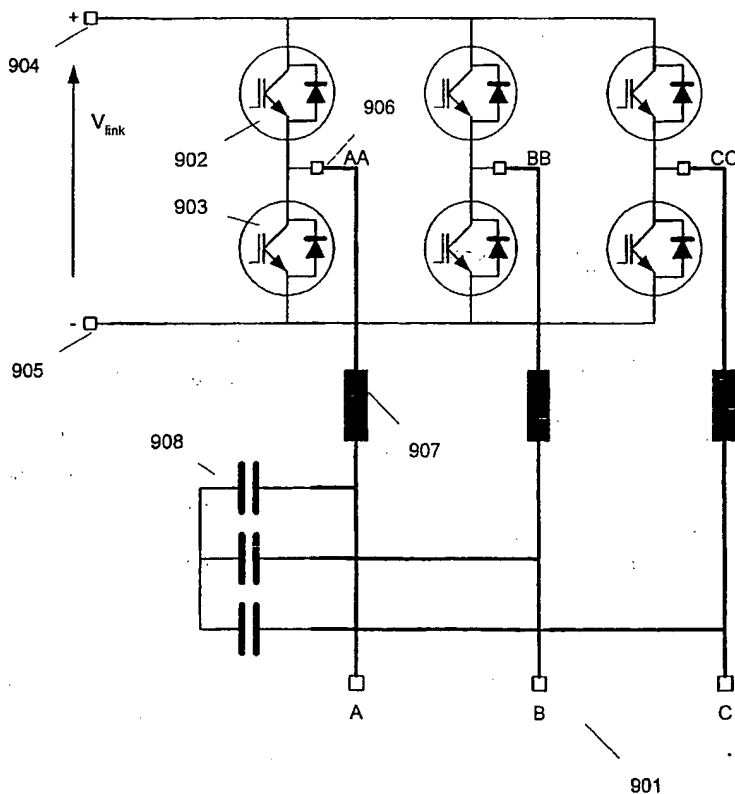
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- (71) Applicant (for all designated States except US): **WEATHERFORD/LAMB, INC.** [US/US]; 515 Post Oak Blvd., Suite 600, Houston, TX 77027 (US).
- (71) Applicant (for IS only): **HARDING, Richard, Patrick** [GB/GB]; Marks & Clerk, 4220 Nash Court, Oxford Business Park South, Oxford, Oxfordshire OX4 2RU (GB).
- (72) Inventor; and  
(75) Inventor/Applicant (for US only): **YURATICH, Michael, Andrew** [US/GB]; 14 Old Priory Close, Hamble, Hampshire SO31 4QP (GB).
- (74) Agent: **HARDING, Richard, Patrick**; Marks & Clerk, 4220 Nash Court, Oxford Business Park South, Oxford, Oxfordshire OX4 2RU (GB).
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(54) Title: ELECTRIC SUBMERSIBLE PUMPS



(57) Abstract: An electric submersible pump contains an AC permanent magnet motor having three or more phases A, B, C and has a drive circuit for supplying varying drive signals to all the phases of the motor at the same time. Each drive signal is constituted by a cyclically smoothly varying voltage applied to the corresponding motor phase during driving of the motor. The circuit comprises switches (902, 903) for each motor phase, a control arrangement for turning the switches (902, 903) on and off at a frequency greater than the frequency of the cyclically smoothly varying voltages, and a filter (907, 908) for filtering the output voltages of the switches (902, 903) to produce the cyclically smoothly varying voltages. Such a drive circuit drives all the phases of the motor continuously such that damaging transients will not arise and without requiring the motor emf or drive signals to be sinusoidal.



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